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ABSTRACT

An overview of the Educational Resources Information Center (ERIC) is presented, with a discussion of proposed improvements to ERIC's acquisition, synthesis, and dissemination activities. The Department of Education's Office of Educational Research and Improvement (OERI) has emphasized that ERIC products and services should be more widely available and should be used by more diverse audiences. Achieving that goal hinges on three factors: receiving additional resources, applying new technologies, and adapting systemwide management policies. A framework for system improvement, put in place during the 1987 competition for ERIC Clearinghouse contracts, already has begun to implement mechanisms to improve the quality of information in the ERIC database, coordinate systemwide products and services through the creation of ACCESS ERIC (a new system component), expand publications, establish a network of ERIC Partners, collaborate more systematically with other federal education programs, and identify and index critical statistical information. Future system improvement options are also discussed, such as expanding database and journal coverage, developing the capability to store and retrieve full-text documents, creating expert search systems, enhancing electronic dissemination, developing new publication series, and marketing ERIC products and services in ways that better reach practicing educators. The concepts for ERIC system improvement will be more fully developed in a document--"ERIC in the Year 2000"--now under development. An address and telephone directory of the components of the ERIC system is attached. Scope notes describe the areas of coverage of the individual clearinghouses. (3 references) (Author/MES)

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HOW ERIC CAN BETTER SERVE THE CONSUMER: PROSPECTS FOR PROGRAM IMPROVEMENT

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U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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INTRODUCTION

As will become evident from the following discussion of the Educational Resources Information Center's (ERIC) work in acquiring, synthesizing and disseminating critical education information, ERIC is not a program that needs fixing. It is however, part of a research, development and dissemination system that could be significantly improved.

The purpose of this paper is to present a brief overview of the ERIC system today, to systematically discuss aspects of the system which could be improved, and to propose means to bring about such change. In general, improvement in the ERIC program can only come about through a confluence of three factors: increased resources, application of new technologies, and systemwide management of products, services and policies.

A BRIEF OVERVIEW OF ERIC

Before an audience can appreciate a discussion of ERIC improvement options, it is critical to understand the system itself. ERIC, while familiar to millions of users, is not always well understood, since it is a complex system involving the Federal government, university-based and private contractors, the private sector, and information service providers located throughout the world.

Some commonly asked questions and answers about the ERIC system follow:

What components form the ERIC system, and what does each do?

The ERIC system is an interactive, decentralized network consisting of the following components:

Central ERIC is the program management staff within OERI. Central ERIC staff administers the program, plans systemwide activities, makes policy and budget determinations, provides technical guidance, approves the development of new materials and services, and reviews and approves documents and products.

The opinions expressed in this paper are those of the author, and do not necessarily represent the position of the U.S. Department of Education or of OERI.

Sixteen ERIC Clearinghouses, located throughout the country, acquire, process, and disseminate educational information. Each Clearinghouse is responsible for a specific aspect of education (Appendix 1 describes each of the ERIC Clearinghouses).

The ERIC Processing and Reference Facility (the Facility) is the technical hub of the system, processing documents for entry into the database and maintaining quality control standards for the entire system. The Facility receives and edits the database entries from each Clearinghouse, prepares the magnetic tapes used for storage and retrieval, and performs systemwide reference and coordination functions.

Each month, the **Government Printing Office** announces new ERIC documents in Resources in Education (RIE), while new journal article annotations are disseminated in Current Index to Journals in Education (CIJE), published privately by **The Oryx Press.**

The **ERIC Document Reproduction Service** (EDRS) provides microfiche and paper copies, upon demand or by subscription, of original documents cited in the ERIC database. Each month, EDRS provides a complete set of new ERIC microfiche to each of the nearly 900 "Standing Order Customers" worldwide. Users unable to easily locate the journals themselves can obtain reprints of most of the articles cited in CIJE from **University Microfilms, Inc. (UMI).**

ERIC is built as a relatively well-defined relationship between a federal agency, Clearinghouses, service providers, and users. The centralized aspects provide quality control for indexing, coordination of the operations, a common input point for the federal community, and overall system planning. The decentralized Clearinghouses and service providers allow leverage of funding, sources closer to users, and specialized expertise which increases the credibility of the entire system.

--Kenneth Dowlin,
commissioned paper

What functions are carried out by the Clearinghouses?

Database-Building Activities. The ERIC database is a collection of nearly 670,000 summaries (containing index terms and abstracts) of education-related documents, reports, and journal articles. These summaries are in machine-readable form and can be electronically searched. Currently, the ERIC database contains abstracts of approximately 290,000 mostly unpublished documents and 378,000 journal articles. In 1988, 12,129 new documents and 18,260 journal articles were added to the ERIC database.

Each Clearinghouse acquires and selects the most significant education literature within its particular scope. Following guidelines of the ERIC Processing Manual and the Thesaurus of

ERIC Descriptors, each Clearinghouse catalogs, indexes and abstracts these selections for database entry.

User Services. According to the Department of Education's ERIC Annual Report--1987, ERIC "facilitates the exchange of information between information producers and users to improve educational practice (OERI, 1988).

A major purpose of ERIC is to provide reference and retrieval services to the public; these services include literature searches, bibliographies, identification of popular documents, and referrals to sources of information.

The teacher who needs a curriculum guide, the administrator who must implement a new program, the education student learning about teaching methods, the lawmaker drafting education legislation--all are examples of the clients ERIC seeks to serve with information resources (OERI, 1988).

- During calendar year 1987, the ERIC system responded to 121,500 requests for information. About half of these requests came in letters, with telephone calls and onsite visits, in roughly equal proportion, accounting for the remainder.

- Education practitioners made the most requests (37 percent), followed by decisionmakers (17 percent), information specialists (15 percent), and students (11 percent). The remaining 20 percent represented research specialists, professional organizations, government agencies, and others.

Publications. The ERIC Clearinghouses produce a variety of documents to serve those interested in their scope areas and the general public.

- In 1987, ERIC Clearinghouses produced 239 publications, 50 newsletters or bulletins (distributing over 375,000 copies), 200 journal columns, and 103 journal articles. Since 1966, the ERIC Clearinghouses have produced nearly 5,000 publications on a wide range of educational topics.

- Each Clearinghouse annually produces 8-12 Digests, two-page summaries of critical research findings usually designed for the practitioner. Digests are usually available free in print form, and are also available online in full text. In

1987, the Clearinghouses produced 153 Digests and distributed nearly 200,000 copies of Digests to the public.

- Each Clearinghouse also produces lengthier publications, such as monographs and trends-and-issues papers. Many of the Clearinghouses have extensive publication programs that are in part supported by funds contributed by the host institutions.

How is the ERIC database accessed?

The ERIC database is available in print (RIE and CIJE), in microfiche, online (through three commercial vendors--DIALOG Information Services, Orbit, and BRS Information Technologies), and on compact disk-read-only memory, or CD-ROM (also through three vendors--DIALOG, SilverPlatter, and OCLC).

Who uses the ERIC database?

While it is impossible to assess the overall usage of the ERIC database, we know the following:

- ERIC in print and microfiche. Approximately 3,000 organizations and institutions receive Resources in Education, the print index of ERIC documents. Of these 3,000, approximately 2,000 are GPO subscriptions; the remainder represent depository libraries and arrangements with foreign governments. Approximately 1,800 institutions receive Current Index to Journals in Education, the print index of journal articles covered in ERIC. Approximately 780 domestic and 110 foreign institutions maintain microfiche ERIC document collections.

- ERIC Online. Although online vendors consider information about their users proprietary, the major vendors offering ERIC online have begun to share limited usage data with us. Overall, ERIC searchers log approximately 80,000 online hours per year, at a total cost exceeding $2.5 million. It has been estimated that approximately 300,000 online ERIC searches are conducted each year just on DIALOG, the most popular of the online ERIC systems.

- ERIC on CD-ROM. It is impossible to know how many people use ERIC on CD-ROM, and how long they spend searching. What is clear is that CD-ROM has become increasingly popular; many university libraries have multiple ERIC CD-ROM stations that are used continuously from opening to closing time. One vendor, SilverPlatter, now has over 850 subscribers.

THE ERIC REDESIGN

For the past three years, ERIC has been under intense scrutiny. A two-year "ERIC Redesign Study" culminated in 1987 with the publication of the widely-discussed paper "ERIC In Its Third Decade" (Bencivenga, 1987). Later that same year, the House Subcommittee on Select Education sponsored the first oversight hearings of ERIC, on July 30, 1987. As a result of the ERIC Redesign Study, OERI identified three main emphases for improving ERIC:

- ERIC products and services should become more widely used and available;
- ERIC should become better integrated into OERI's mission of gathering, analyzing, and reporting information on the status and condition of American education; and,
- ERIC should serve a wider, more diverse audience, including policymakers, journalists, practitioners, and the general public.

A FRAMEWORK FOR SYSTEM IMPROVEMENT

The recompetition of the ERIC Clearinghouses, completed in December, 1987, was the vehicle in which ERIC began to systematically carry out these goals. While maintaining ERIC's critical role in acquiring significant documents and in covering the journal literature, the Request for Proposals for ERIC Clearinghouses established or re-emphasized several new activities, including:

Procedures to improve the quality and utility of the information in the database. During its 23-year history, the ERIC system has developed and refined its document selection criteria, described in detail in the ERIC Processing Manual, which must be adhered to by the Clearinghouses. ERIC's selection criteria require that all documents processed into the system have demonstrable relevance to the field of education and to the areas covered by the Clearinghouses. Quality is the single most important selection criterion; as a result, approximately one-third of the documents reviewed are not selected for inclusion into the system. Finally, the Clearinghouse contracts require that objective information reflecting diverse viewpoints be acquired for the system.

- To oversee the adherence of the Clearinghouses to these standards, ERIC program staff have initiated new procedures to improve quality control throughout the ERIC system. Review panels, comprised of individuals with expertise in the scope area of the respective Clearinghouses, are often established to provide quality reviews for ERIC products.

ERIC staff now routinely review all documents acquired or produced by each Clearinghouse.

- The Clearinghouses actively use external advisory boards to help set policies to ensure objectivity and comprehensiveness in acquisitions and publications.

- Each Clearinghouse must annually provide a Washington, DC-based seminar for researchers, scholars, and program administrators. At these seminars, Clearinghouse staff both share and learn from the other programs, including information on proposed publications, new initiatives, and emerging "hot topics."

An expanded series of practitioner-oriented publications. Each Clearinghouse was required to develop up to 12 new ERIC Digests per year, and to produce "trends-and-issues" papers and monographs which would be useful to both the professional research community as well as to practitioners and policymakers.

A network of "ERIC Partners." Each Clearinghouse was to identify and establish ERIC Partners, which are organizations or institutions which would willingly and voluntarily assist the Clearinghouses with dissemination and acquisition activities. To date, over 500 Partners have been enlisted by the Clearinghouses.

Improved collaboration with other OERI-funded programs. Clearinghouses were required to develop specific plans and activities for substantive collaboration with other OERI programs, including but not limited to the Regional Educational Laboratories, the National Research and Development Centers, and the National Diffusion Network. Ultimately, such collaboration and cooperation will result in more efficient use of scarce resources, and in a more comprehensive system of research, development and dissemination in OERI.

- ERIC already has a number of existing links with the National Diffusion Network program. The ERIC database includes both directories of NDN programs (with descriptions and identified contact persons) and some NDN program materials (e.g., curricula, training modules, evaluation reports). ERIC is also hopeful that NDN State Facilitators could expand ERIC's acquisitions efforts by locating critical state-produced documents and materials.

- Clearinghouses have proposed several strategies for improving collaboration with the Regional Educational Laboratories and the National Research and Development Centers. For example, more cooperative publications and dissemination activities could take place; joint workshops might be developed for specific audiences; ERIC Clearing-

house, Regional Laboratory and Research Center staff could more often serve on each others' advisory boards; and, products could be routinely announced in each others' newsletters and by ACCESS ERIC.

The acquisition and indexing of information about statistical databases. Clearinghouses and the Facility were required to identify and process information about important statistical databases. To date, about 100 major datasets have been entered into the ERIC system.

Most importantly, OERI also began planning in 1987 to implement an entirely new component of the ERIC system--**ACCESS ERIC**. Scheduled to begin operating in April, 1989, ACCESS ERIC will coordinate systemwide ERIC product development, reference services, dissemination, and special projects. ACCESS ERIC will be a national contact point for ERIC resources and information. ACCESS ERIC will develop and promote ERIC products and services to expanded audiences including practitioners, policymakers, parents, journalists and the general public. It will conduct user studies, suggest system refinements, and coordinate an expanded network of ERIC Partners.

To successfully implement and expand these new system missions and components, the Administration requested $6.1 million for the ERIC program for FY 1989; however, only $5.7 million was appropriated. In FY 1990, the Administration has requested $6.65 million. If granted, the funding increase will be used to expand Clearinghouse acquisition activities and publications. Dissemination will be strengthened, and the role of the other system components will be significantly expanded.

More specifically, additional resources for ERIC will support expanded Clearinghouse products and services, especially publications, acquisitions, journal coverage, dissemination (including collaboration with ACCESS ERIC), user services and partnership building. The request will also allow ACCESS ERIC to expand and better serve its network of users and partners, especially school districts, and to keep the public informed--through the publication three times a year of the ERIC Review--about the most significant new materials and research findings in the ERIC system.

FUTURE SYSTEM IMPROVEMENT OPTIONS

During the past three years, virtually every person affiliated with the ERIC program and many members of the ERIC user community have had the opportunity to consider ways to improve the system. However, all of the proposed improvements are dependent on receiving the new funding requested by the Administration, on the creation or application of new technologies, or on sound and

creative system management initiatives; many improvement options require the presence of all three.

This section of the paper will describe potential system improvement activities in the following areas: the ERIC database; expanded coverage of the field; publications and electronic dissemination; and, policy development.

The ERIC Database. ERIC is the world's premier educational database, and sets worldwide standards for indexing and authority control. However, the ERIC database lacks features contained in other databases, including the availability of full-text documents, the provision of non-print media, and the presence of user-friendly "expert systems" to guide database searchers. ERIC's plans call for exploring the following options:

- Beginning in Fall 1989, ERIC Digests will be available from DIALOG online in full-text. However, the vast capability of **optical disk storage opens up the potential for the full set of ERIC documents to become available electronically.** It is already possible to store a full year's worth of ERIC documents--about 15,000 of them--on one optical laser disc. One disc could hold the equivalent of 20,000 microfiche.

- For the most part, ERIC is a repository and disseminator of printed documents. Yet, increasingly materials are being produced in a variety of formats, including machine-readable, video- or audiotape, and optical media. **ERIC must be prepared--through EDRS, through other sources, or in cooperation with other programs--to help users routinely become aware of and to obtain products other than paper or microfiche.**

- Other bibliographic systems--such as the National Library of Medicine's MEDLINE--have user-friendly interface systems to help searchers understand the logical relationships between elements in the database. **These expert systems evaluate a user's choices, and suggest strategies for locating relevant materials a searcher may be overlooking.** The emerging field of hypertext--which can help users find related concepts in very disparate documents and media--is an especially promising tool that could help create the next "smart" generation of the ERIC database.

Expanding Coverage of the Field. ERIC does not have now, nor did it ever have, resources sufficient to cover the entire field of education. Increasingly, ERIC must work with other program areas within the Department of Education, and with outside groups, to gain direct support for acquisitions, synthesis and publications activities in topics of mutual interest. One way to carry this policy forward is through the establishment of **Adjunct**

Clearinghouses, which would work in conjunction with a regular ERIC Clearinghouse to thoroughly cover a targeted content area, e.g. art education or compensatory education.

- ERIC is in the process of establishing the first two Adjunct Clearinghouses. ERIC has obtained Adult Education program funds to establish an **Adjunct Clearinghouse on Literacy Education**, and is working on a three-year plan with the Getty Center for Education and the Arts to establish an **Adjunct Clearinghouse on Art Education.** Other potential Adjunct Clearinghouses--which would not require OERI funding--include areas such as compensatory education, gifted education, educational legislation and school reform.

- While CIJE notes that ERIC covers 740 journals, only a small subset are covered "cover-to-cover." Due to limited resources, most journals are covered selectively, and as a result, many important articles are not processed for the ERIC database. In particular, "out-of-field" articles and international journals tend to receive short shrift. Aside from increasing resources in this area, **a national advisory board, to help establish uniform policy for the inclusion and coverage of journals by the ERIC system, could be established.**

Another way to address this issue is by coordinating ERIC system activities with those of other clearinghouses and information service providers. OERI staff have identified over 100 education-related clearinghouses, most of which have their own acquisitions and dissemination networks (Klein, 1989).

Publications and Electronic Dissemination. With the advent of ACCESS ERIC, new horizons are opened up for the systematic development of identifiable ERIC publications series and for the increased use of electronic media in disseminating ERIC information. Some areas for potential system improvement and expansion include the following:

Publications:

- At present, Digests are the only standardized ERIC publication--they are recognizable as ERIC products regardless of which Clearinghouse has prepared them. **The ERIC product line must be expanded, however, to include other types of publications--each instantly recognizable as an ERIC product--and audiences.** An ERIC task force is now working on this issue, and will soon be issuing its recommendations.

- In addition, **centralized marketing of ERIC products, a one-stop shopping center for educational materials, will be**

possible with the establishment of ACCESS ERIC. ACCESS ERIC will be responsible for systemwide advertising and marketing of ERIC products, and will play a "needs-sensing" role in the education community to ascertain what new types of materials would be useful.

Electronic dissemination:

- Users of ERIC often mistakenly believe that an ERIC search will reveal all materials likely to be of interest to them, without realizing the inherent limitations of the ERIC database. **Both ERIC printed products and ERIC online or CD-ROM products could improve their advice to users, such as by suggesting other data sources or by offering direct electronic gateways to such sources.** For instance, a database of ongoing Federally-funded research projects in education--which is now under development at OERI--might very well be of immediate interest to an ERIC searcher, as might education-related information contained in Department of Defense or National Science Foundation databases.

- **Electronic bulletin boards are increasingly being used to make ERIC information directly available to users.** For instance, ERIC Digests are available--in full text--on the OERI Bulletin Board and on some PLATO systems, and will soon be available through the GTE Educational Network's ED-LINE. ACCESS ERIC will be required to establish and maintain a Bulletin Board dedicated to ERIC products and services.

Policy Development. ERIC, like information dissemination programs throughout government and private industry, is staring at a future guided by uncertain policies. At present, there are no consistent Federal policies concerning electronic information dissemination, copyright, royalty agreements and user fees, or commercial versus governmental services, to list but a few of the issues. It is not always clear where the role of the government is to begin or to end, or how one can achieve the purposes for which government programs were developed when most of the locus of control over the operating programs is in the private sector.

Some policy areas affecting the operation of ERIC, and for which resolution is required but may not be easily obtained, include the following issues:

- **What segments of the educational literature should ERIC cover?** ERIC's document acquisition activities have always focused on materials which can be photographed, copied and disseminated royalty-free. However, a portion of the ERIC database--approximately two percent--references copyrighted materials (e.g. commercially-published books) which ERIC cannot distribute in microfiche or paper copy. The ERIC

components themselves are divided on whether ERIC should increase or decrease its emphasis on acquiring and announcing copyrighted materials.

- **What are the rights of the Government to fairly use materials produced, in whole or in part with Government funds, when value has been added, or a copyright obtained, by the issuing agency?** Historically, ERIC has often had difficulty obtaining critical documents produced with Federal support, but which have been copyrighted or re-issued in a somewhat different version. Consistent policies regarding the fair use of such documents, and consistent and fair methods for acquiring such materials, must be put into place and widely shared.

- **Does announcing a document in RIE rule out subsequent publication in a refereed journal?** Document authors frequently resist placing their materials in ERIC, on the assumption that this rules out their ability to subsequently publish their papers, or revised versions of their papers, in scholarly journals. While ERIC contends that documents are announced in ERIC, and not published, there nevertheless is a resistance among a substantial number of authors to place their materials in ERIC. Specific policies regarding the role of ERIC and the role of refereed journals must be developed and disseminated. As a first step, ERIC will be conducting a limited survey of journal editors to ascertain their position on this issue.

- **How can the ERIC program best coordinate with the myriad number of other clearinghouses and information service providers throughout education?** Since ERIC has a 23-year history of operation and extensive system standards, it may be logical for other clearinghouses collecting and distributing education information to use, where appropriate, ERIC standards for acquisitions, cataloging and indexing. Materials entered in ERIC will remain available, while other clearinghouses and programs come and go. Some non-ERIC clearinghouses, for instance the Office of Bilingual Education and Minority Language Affair's Clearinghouse on Bilingual Education, use ERIC manuals and procedures, as do a number of foreign countries. But the widespread adoption of ERIC system standards throughout education will be difficult, especially if ERIC does not develop methods for acquiring and distributing non-print media.

SUMMARY

The previous sections of this paper have summarized recent program improvement initiatives in the ERIC system and presented

a number of options for future system enhancement. Of course, all of these initiatives are dependent on increased resources; the ERIC system has learned well over the past two years that meaningful improvement cannot easily come about in the face of constant or diminishing resources.

Nevertheless, the ERIC system continues to anticipate and to plan for change. A group of systemwide task forces has recently been established to investigate and suggest improvements in several areas, including technology, publications and products, assessment, and resource development. The culmination of this work will be a blueprint for future growth--ERIC in the Year 2000.

While some of the ideas discussed earlier in this paper originate from or are under consideration by the ERIC task forces, the treatment here has been only loosely organized. In contrast, ERIC in the Year 2000 will systematically review ERIC's activities, audiences, and expanded mission in light of the new technologies and techniques that can be applied. I hope that at this time next year, I can report on the work of the ERIC task forces, and provide a more comprehensive vision of the ERIC of the future.

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ERIC Ready Reference # 6
Revised July 1989

ERIC CLEARINGHOUSES *(and Other Network Components)*

The ERIC Clearinghouses have responsibility within the network for acquiring the significant educational literature within their particular areas, selecting the highest quality and most relevant material, processing (i.e., cataloging, indexing, abstracting) the selected items for input to the data base, and also for providing information analysis products and various user services based on the data base.

The exact number of Clearinghouses has fluctuated over time in response to the shifting needs of the educational community. There are currently 16 Clearinghouses. These are listed below, together with full addresses, telephone numbers, and brief scope notes describing the areas they cover.

ERIC Clearinghouse on *Adult, Career, and Vocational Education* (CE)
Ohio State University
Center on Education and Training for Employment
1900 Kenny Road
Columbus, Ohio 43210-1090
Telephone: (614) 292-4353; (800) 848-4815

All levels and settings of adult and continuing, career, and vocational/technical education. Adult education, from basic literacy training through professional skill upgrading. Career education, including career awareness, career decisionmaking, career development, career change, and experience-based education. Vocational and technical education, including new subprofessional fields, industrial arts, corrections education, employment and training programs, youth employment, work experience programs, education/business partnerships, entrepreneurship, adult retraining, and vocational rehabilitation for the handicapped.

ERIC Clearinghouse on *Counseling and Personnel Services* (CG)
University of Michigan
School of Education, Room 2108
610 East University Street
Ann Arbor, Michigan 48109-1259
Telephone: (313) 764-9492

Preparation, practice, and supervision of counselors at all educational levels and in all settings; theoretical development of counseling and guidance; personnel procedures such as testing and interviewing and the analysis and dissemination of the resultant information; group work and case work; nature of pupil, student, and adult characteristics; personnel workers and their relation to career planning, family consultations, and student orientation activities.

ERIC Clearinghouse on *Educational Management* (EA)
University of Oregon
1787 Agate Street
Eugene, Oregon 97403-5207
Telephone: (503) 686-5043

The leadership, management, and structure of public and private educational organizations; practice and theory of administration; preservice and inservice preparation of administrators; tasks and processes of administration; methods and varieties of organization and organizational change; and the social context of educational organizations.

Sites, buildings, and equipment for education; planning, financing, constructing, renovating, equipping, maintaining, operating, insuring, utilizing, and evaluating educational facilities.

ERIC Clearinghouse on *Elementary and Early Childhood Education* (PS)
University of Illinois
College of Education
805 W. Pennsylvania Avenue
Urbana, Illinois 61801-4897
Telephone: (217) 333-1386

The physical, cognitive, social, educational, and cultural development of children from birth through early adolescence; prenatal factors; parental behavior factors; learning theory research and practice related to the development of young children, including the preparation of teachers for this educational level; educational programs and community services for children; and theoretical and philosophical issues pertaining to children's development and education.

ERIC Clearinghouse on *Handicapped and Gifted Children* (EC)
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091-1589
Telephone: (703) 620-3660

All aspects of the education and development of the handicapped and gifted, including prevention, identification and assessment, intervention, and enrichment, both in special settings and within the mainstream.

ERIC Clearinghouse on *Higher Education* (HE)
George Washington University
One Dupont Circle, N.W., Suite 630
Washington, D.C. 20036-1183
Telephone: (202) 296-2597

Topics relating to college and university conditions, problems, programs, and students. Curricular and instructional programs, and institutional research at the college or university level. Federal programs, professional education (medicine, law, etc.), professional continuing education, collegiate computer-assisted learning and management, graduate education, university extension programs, teaching-learning, legal issues and legislation, planning, governance, finance, evaluation, interinstitutional arrangements, management of institutions of higher education, and business or industry educational programs leading to a degree.

ERIC Clearinghouse on *Information Resources* (IR)
Syracuse University
School of Education
Huntington Hall, Room 030
150 Marshall Street
Syracuse, New York 13244-2340
Telephone: (315) 443-3640

Educational technology and library and information science at all levels. Instructional design, development, and evaluation are the emphases within educational technology, along with the media of educational communication: computers and microcomputers, telecommunications (cable, broadcast, satellite), audio and video recordings, film and other audiovisual materials, as they pertain to teaching and learning. Within library and information science the focus is on the operation and management of information services for education-related organizations. All aspects of information technology related to education are considered within the scope.

ERIC Clearinghouse for *Junior Colleges* (JC)
University of California at Los Angeles (UCLA)
Mathematical Sciences Building, Room 8118
405 Hilgard Avenue
Los Angeles, California 90024-1564
Telephone: (213) 825-3931

Development, administration and evaluation of two-year public and private community and junior colleges, technical institutes, and two-year branch university campuses. Two-year college students, faculty, staff, curricula, programs, support services, libraries, and community services. Linkages between two-year colleges and business/industrial organizations. Articulation of two-year colleges with secondary and four-year postsecondary institutions.

ERIC Clearinghouse on *Languages and Linguistics* (FL)
Center for Applied Linguistics
1118 22nd Street, N.W.
Washington, D.C. 20037-0037
Telephone: (202) 429-9551

Languages and language sciences; theoretical and applied linguistics; all areas of foreign language, second language, and linguistics instruction, pedagogy, or methodology; psycholinguistics and the psychology of language learning; cultural and intercultural context of languages; application of linguistics in language teaching; bilingualism and bilingual education; sociolinguistics; study abroad and international exchanges; teacher training and qualifications specific to the teaching of foreign languages and second languages; commonly and uncommonly taught languages, including English as a second language; related curriculum developments and problems

ERIC Clearinghouse on *Reading and Communication Skills* (CS)
Indiana University, Smith Research Center
2805 East 10th Street, Suite 150
Bloomington, Indiana 47405-2373
Telephone: (812) 855-5847

Reading, English, and communication skills (verbal and nonverbal), preschool through college; educational research and instruction development in reading, writing, speaking, and listening; identification, diagnosis, and remediation of reading problems; speech communication (including forensics), mass communication, interpersonal and small group interaction, interpretation, rhetorical and communication theory, speech sciences, and theater. Preparation of instructional staff and related personnel in these areas.

All aspects of reading behavior with emphasis on physiology, psychology, sociology, and teaching; instructional materials, curricula, tests/measurement, and methodology at all levels of reading; the role of libraries and other agencies in fostering and guiding reading; diagnostics and remedial reading services in schools and clinical settings. Preparation of reading teachers and specialists.

ERIC Clearinghouse on *Rural Education and Small Schools* (RC)
Appalachia Educational Laboratory
1031 Quarrier Street
P.O. Box 1348
Charleston, West Virginia 25325-1348
Telephone: (800) 624-9120 (Outside WV);
(800) 344-6646 (Inside WV)

Economic, cultural, social, or other factors related to educational programs and practices for rural residents; American Indians/Alaska Natives, Mexican Americans, and migrants; educational practices and programs in all small schools; outdoor education.

ERIC Clearinghouse for *Science, Mathematics, and Environmental Education* (SE)
Ohio State University
1200 Chambers Road, Room 310
Columbus, Ohio 43212-1792
Telephone: (614) 292-6717

Science, mathematics, and environmental education at all levels, and within these three broad subject areas, the following topics: development of curriculum and instructional materials; teachers and teacher education; learning theory/outcomes (including the impact of parameters such as interest level, intelligence, values, and concept development upon learning in these fields); educational programs; research and evaluative studies; media applications; computer applications.

ERIC Clearinghouse for *Social Studies/Social Science Education* (SO)
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, Indiana 47405-2373
Telephone: (812) 855-3838

All levels of social studies and social science education; content of the social science disciplines; applications of theory and research to social science education; contributions of social science disciplines (anthropology, economics, geography, history, sociology, social psychology, political science); education as a social science; comparative education (K-12); content and curriculum materials on "social" topics such as law-related education, ethnic studies, bias and discrimination, aging, adoption, womens' equity, and sex education.

ERIC Clearinghouse on *Teacher Education* (SP)
American Association of Colleges for Teacher Education (AACTE)
One Dupont Circle, N.W., Suite 610
Washington, D.C. 20036-2412
Telephone: (202) 293-2450

School personnel at all levels; teacher selection and training, preservice and inservice preparation, and retirement; the theory, philosophy, and practice of teaching; curricula and general education not specifically covered by other clearinghouses; all aspects of physical education, health education, and recreation education.

ERIC Clearinghouse on *Tests, Measurement, and Evaluation* (TM)
American Institutes for Research (AIR)
Washington Research Center
3333 K St., N.W.
Washington, DC 20007-3893
Telephone: (202) 342-5060

Tests and other measurement devices; methodology of measurement and evaluation; application of tests, measurement, or evaluation in educational projects or programs; research design and methodology in the area of testing and measurement/evaluation; learning theory in general.

ERIC Clearinghouse on *Urban Education* (UD)
Teachers College, Columbia University
Institute for Urban and Minority Education
Main Hall, Room 300, Box 40
525 W. 120th Street
New York, New York 10027-9998
Telephone: (212) 678-3433

Programs and practices in public, parochial, and private schools in urban areas and the education of particular racial/ethnic minority children and youth in various settings – local, national, and international; the theory and practice of educational equity; urban and minority experiences; and urban and minority social institutions and services.

Educational Resources Information Center (Central ERIC)
U.S. Department of Education
Office of Educational Research and Improvement (OERI)
555 New Jersey Ave., N.W.
Washington, D.C. 20208-5720
Telephone: (202) 357-6289

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